



# **Manufacturing in Virginia**

## **Overview**



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## Overall Assessment

- Manufacturing is Virginia's largest basic industry with 404,900 employees in 6,932 establishments and with finished product shipments worth more than \$80 billion annually.
- Manufacturing's share of nonagricultural employment has dropped from 28.6 percent in 1949 to 12.2 percent in 1998 primarily due to the faster employment growth of nonmanufacturing industries relative to manufacturing.
- Manufacturing has added 183,300 jobs since 1949, an 83 percent increase.
- Since 1989 manufacturers have been producing more with the same or fewer workers.
- Adjusted for inflation, the value added per manufacturing employee increased from \$50,200 in 1985 to \$65,700 in 1995, a gain of 31 percent.

## Employment - Ten Largest Manufacturing Industries, 1998

Virginia		
Industry	Employment	% of total
Manufacturing	404,900	100.0
1. Food and kindred products	39,800	9.8
2. Transportation	39,000	9.6
3. Printing and publishing	38,100	9.4
4. Textile mill products	33,600	8.3
5. Electrical and electronic equipment	32,700	8.1
6. Industrial machinery	29,600	7.3
7. Lumber and wood products	27,300	6.7
8. Furniture and fixtures	21,900	5.4
9. Chemical and allied products	21,600	5.3
10. Rubber and misc. plastics	21,400	5.3
Top Ten Total	305,000	75.3

Source: U.S. Department of Labor, Bureau of Labor Statistics.

- Virginia's 10 largest manufacturing industries account for 75.3 percent of manufacturing employment
- In 1949 the three largest manufacturing industries were textiles, chemicals, and lumber and wood products. They now rank fourth, ninth, and seventh, respectively.

## Employment Growth - Largest Job Growth Industries, 1969-1998

Virginia		
Industry	Employment Increase	Percent Increase
Manufacturing	33,900	9.1
1. Printing and publishing	24,200	174.1
2. Industrial machinery	19,900	205.1
3. Electrical and electronic equipment	9,900	43.4
4. Transportation equipment	9,900	34.0
5. Rubber and misc. plastics	8,800	69.8
6. Instruments	8,700	378.3
7. Fabricated metal products	7,100	60.2
8. Paper and allied products	3,900	27.9
9. Lumber and wood products	3,700	15.7
10. Food and kindred products	3,600	9.9
Top Ten Total	99,700	57.3

Source: U.S. Department of Labor, Bureau of Labor Statistics.

- Since 1949 printing and publishing has added 31,500 jobs – more than any other industry in Virginia; 77 percent of these jobs were added after 1969.
- Industrial machinery added almost 26,000 jobs since 1958; 77 percent of these jobs were added after 1969.
- Electrical and electronic equipment added 19,800 jobs from 1969 to 1985; since 1985 it has lost 9,900 jobs.
- Transportation equipment added 15,400 jobs from 1969 to 1988; since 1988 it has lost 5,500 jobs.

## Employment Losses - Largest Job Loss Industries, 1969-1998

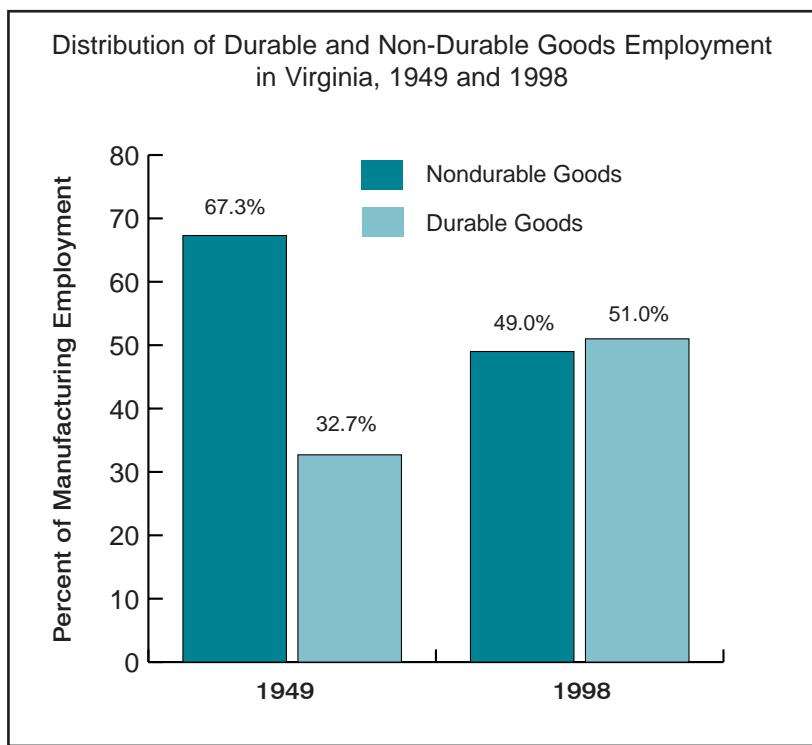
Virginia		
Industry	Employment Loss	Percent Decline
Manufacturing		
1. Chemicals and allied products	-25,400	-54.0
2. Apparel and other textile products	-21,000	-56.9
3. Textile mill products	-10,500	-23.8
4. Tobacco manufactures	-5,900	-39.9
5. Furniture and fixtures	-3,200	-12.8
6. Petroleum and leather products	-700	-36.8
7. Primary metals	-200	-2.0
Total	-66,900	-37.2

Source: U.S. Department of Labor, Bureau of Labor Statistics

- From 1949 to 1969 apparel added 22,000 jobs; from 1969 to 1998 it lost 21,000 jobs.
- Since 1969 apparel and textiles have lost almost 32,000 jobs.

## Employment Trends

### Durable-Non-durable Goods Employment Distribution



Source: U.S. Department of Labor, Bureau of Labor Statistics.

- In 1949 less than a third of all manufacturing employees in Virginia were employed in durable goods; in 1998 slightly more than half were employed in durable goods.
- The shift to durable goods manufacturing was primarily due to the decline of textiles, apparel, chemicals, and tobacco manufactures and the growth of industrial machinery, electrical and electronic equipment, and transportation equipment.

### Absolute Employment Growth

	Virginia	U.S.
	Absolute Employment Change	Absolute Employment Change
1949-1998	183,300	4,331,000
1949-1969	149,400	5,726,000
1969-1998	33,900	-1,395,000

Source: U.S. Census Bureau, *County Business Patterns 1997*.

- Eighty-two percent of Virginia's manufacturing job growth since 1949 occurred from 1949 to 1969.

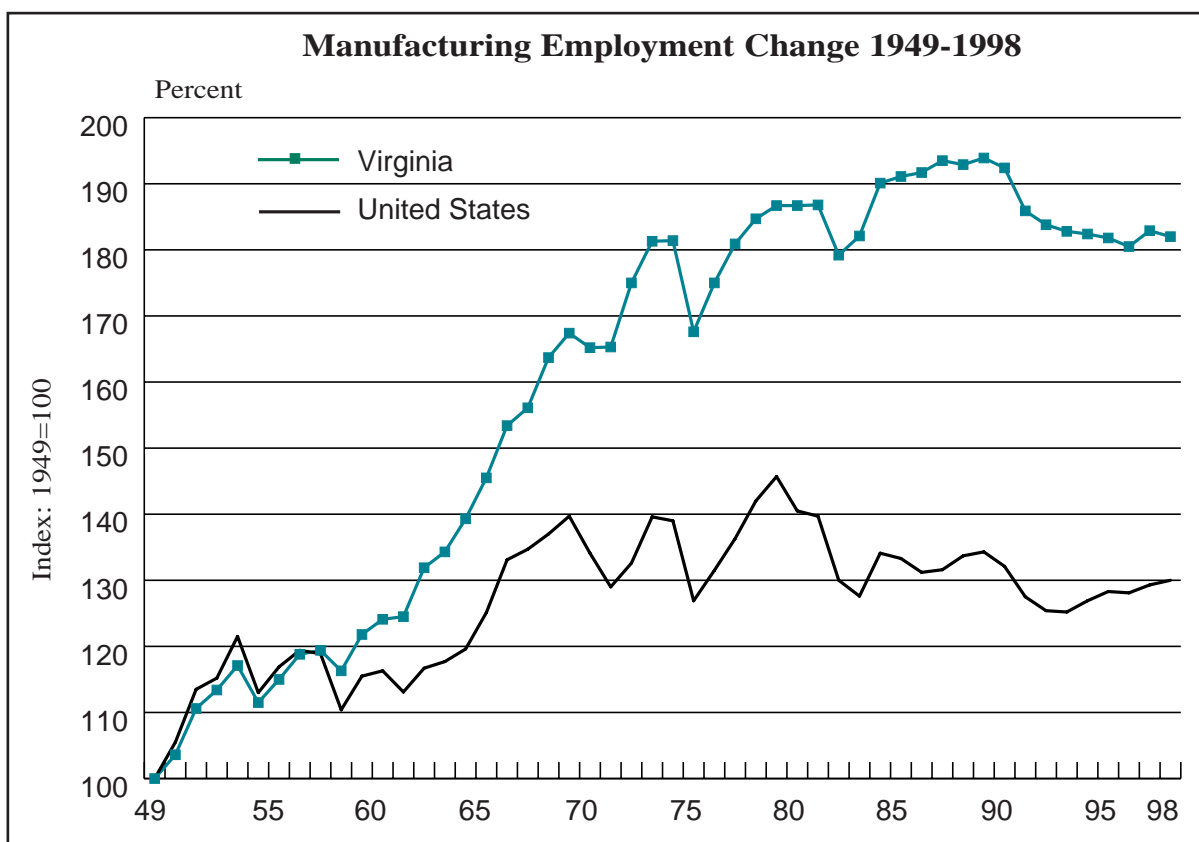
### Relative Employment Growth

Virginia Annual Average Growth Rates			
	Annual Growth Rate, 1949-98	Annual Growth Rate, 1949-69	Annual Growth Rate, 1969-98
Nonagricultural Employment	3.0%	3.0%	3.0%
Manufacturing	1.2%	1.2%	1.2%
Nondurable Goods	0.6%	0.6%	0.6%
Durable Goods	2.2%	2.2%	2.2%

Source: U.S. Census Bureau, *County Business Patterns* 1997.

- Manufacturing's compound annual job growth rate was 8.7 times greater from 1949 to 1969 than from 1969 to 1998.
- Since 1969 the durable goods compound annual job growth rate has been 3.7 times greater than the comparable rate for manufacturing.

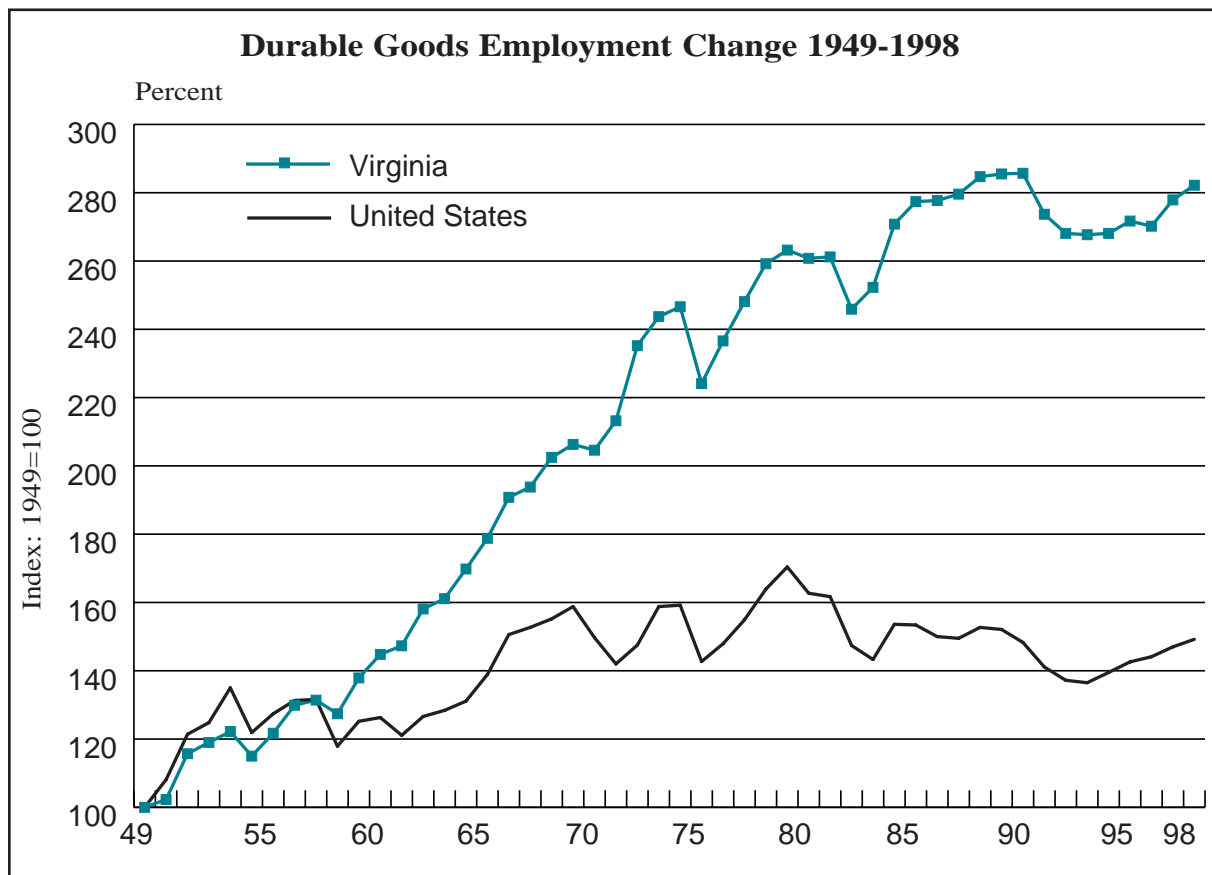
### Long-Term Employment Trends



Source: U.S. Department of Labor, Bureau of Labor Statistics.

- Manufacturing employment growth in Virginia has gone through three distinct phases:
  - ▲ 1949-1974: Manufacturing in Virginia experienced its most rapid growth - growing 2.4 percent annually.
  - ▲ 1974-1989: Manufacturing annual employment growth slowed considerably to 0.4 percent.
  - ▲ 1989-1998: Manufacturing employment **declined** 0.7 percent annually.

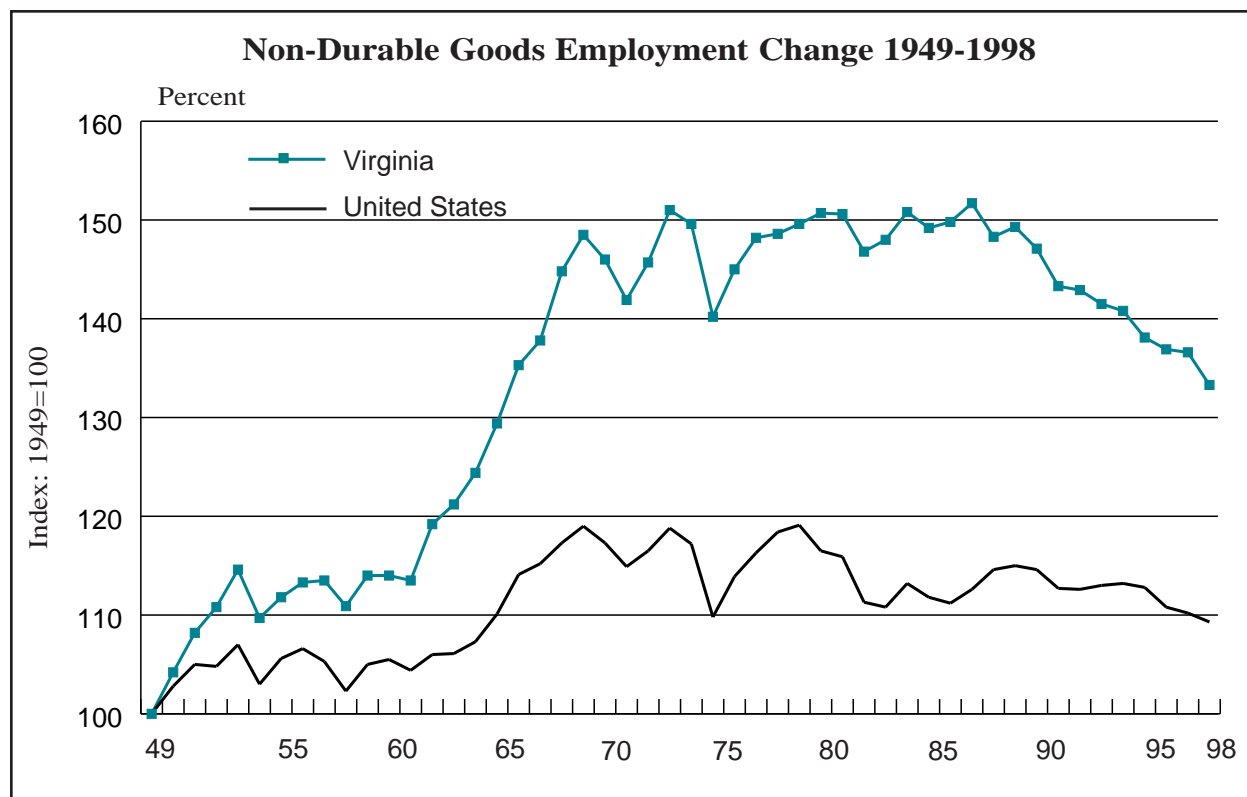
**Long-Term Employment Trends**



Source: U.S. Department of Labor, Bureau of Labor Statistics.

- Durable goods employment growth in Virginia has gone through three distinct phases:
  - ▲ 1949-1974: Durable goods grew 3.7 percent annually - its fastest growth rate from 1948 to 1998.
  - ▲ 1974-1990: Annual slowed considerably to 0.9 percent, less than one-fourth the rate for the preceeding 25 years.
  - ▲ From 1990 to 1998 durable goods employment has experienced a slight 0.03 percent annual decline.

Long-Term Employment Trends



Source: U.S. Department of Labor, Bureau of Labor Statistics.

- Nondurable goods employment growth in Virginia has gone through three distinct phases of growth since 1949:
  - ▲ 1949-1969: Durable goods grew 2.0 percent annually - its fastest growth rate from 1949 to 1998.
  - ▲ 1969-1987: Growth slowed substantially to 0.1 percent annually.
  - ▲ 1987-1998: Durable goods employment **declined** 1.2 percent annually.

## Establishments

### Number of Establishments

	Virginia		U.S.	
	Establishments	Percent of Total	Establishments	Percent of Total
Manufacturing	6,932	100.0%	393,091	100.0
Printing and publishing	1,360	19.6	62,577	15.9
Lumber and wood products	1,286	18.6	37,207	9.5
Industrial machinery	723	10.4	56,696	14.4
Fabricated metal products	424	6.1	38,691	9.8
Food and kindred products	372	5.4	21,223	5.4
Stone, clay, and glass products	350	5.0	16,570	4.2
Apparel and other textile products	334	4.8	23,939	6.1
Electrical and electronic equipment	267	3.9	17,398	4.4
Miscellaneous manufacturers	246	3.5	18,471	4.7
Furniture and fixtures	240	3.5	12,222	3.1
Top Ten Total	5,602	80.8	304,994	77.6

Source: U.S. Census Bureau, *County Business Patterns 1997*.

- Three Industries—printing, lumber, and industrial machinery—account for almost half of Virginia’s manufacturing establishments.
- The top 10 industries account for 81 percent of Virginia’s manufacturing establishments.
- The printing industry accounts for almost one out of every five manufacturing establishments in Virginia.



***Average Employment per Establishment***

	Virginia	U.S.
	Employment	Employment
Manufacturing	58	47
Tobacco manufactures	686	241
Textile mill products	251	89
Transportation equipment	167	124
Paper and allied products	143	95
Primary metal products	125	104
Chemicals and allied products	123	67
Rubber and misc. plastics	108	60
Electrical and electronic equipment	97	88
Food and kindred products	95	73
Instruments	68	67

Source: U.S. Census Bureau, *County Business Patterns 1997*.

## Payroll

***Average Payroll per Employee***

	Virginia	U.S.	
	Payroll per Employee	Payroll per Employee	Virginia as % of U.S.
Manufacturing	\$32,870	\$36,958	88.9
Chemicals and allied products	44,473	46,900	94.8
Instruments	42,560	44,540	95.6
Paper and allied products	41,502	38,606	107.5
Electrical and electronic equipment	38,904	38,660	100.6
Transportation equipment	38,813	44,639	87.0
Primary metal products	33,712	39,420	85.5
Industrial machinery	32,682	38,934	83.9
Fabricated metal products	32,537	33,624	96.8
Printing and publishing	31,937	32,869	97.2
Rubber and misc. plastics	31,285	29,626	105.6

Source: U.S. Census Bureau, *County Business Patterns 1997*.

## Exports

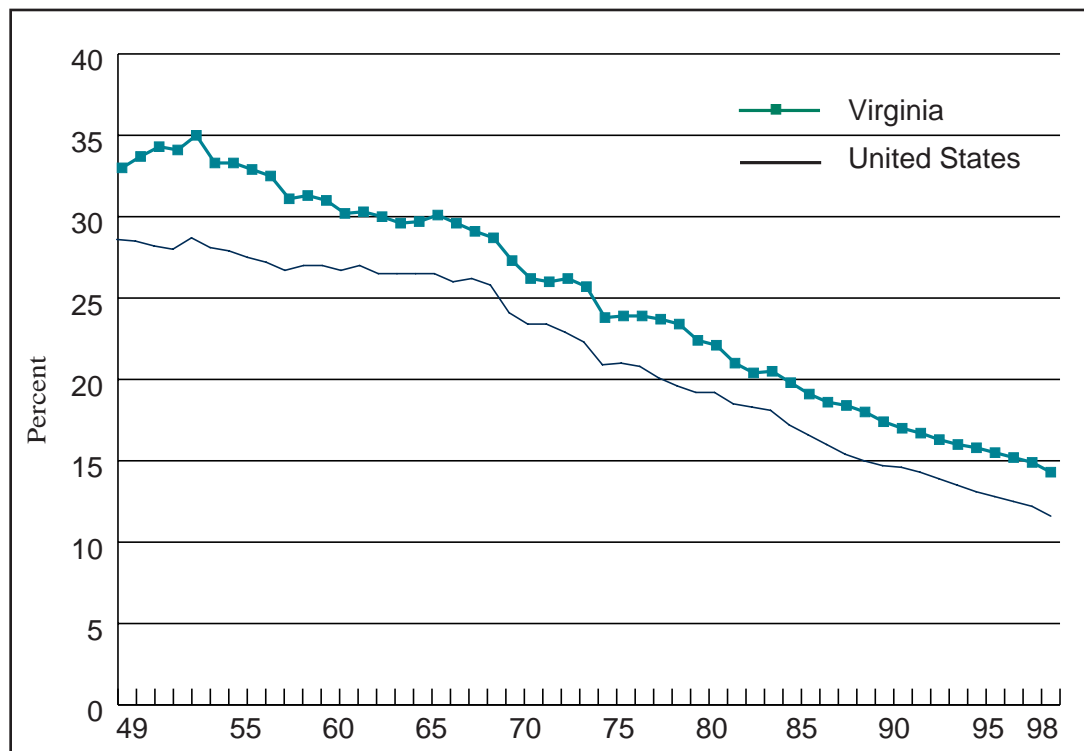
Virginia Exports			
	1998 (000)	1993 (000)	Percent Change 1993-98
Manufacturing	\$10,092,000	\$7,099,000	42.2%
Tobacco manufactures	3,425,000	2,535,000	35.1
Textile mill products	1,105,000	553,000	99.7
Transportation equipment	1,085,000	785,000	38.2
Paper and allied products	966,000	835,000	15.7
Primary metal products	777,000	546,000	42.2
Chemicals and allied products	543,000	228,000	138.5
Rubber and misc. plastics	373,000	212,000	76.2
Electrical and electronic equipment	266,000	171,000	55.3
Food and kindred products	206,000	202,000	2.3
Instruments	187,000	172,000	9.1
Top Ten Total	8,933,000	6,239,000	43.2

Source: U.S. Department of Commerce.

- The ten largest industries account for 89 percent of Virginia's manufactured goods exports.
- The three largest exporting industries — tobacco manufactures, electric and electronic equipment, and industrial machinery — account for 56 percent of manufactured goods exports.
- Tobacco manufactures, primarily cigarettes, account for more than a third of Virginia's manufactured goods exports.

## Industry Importance

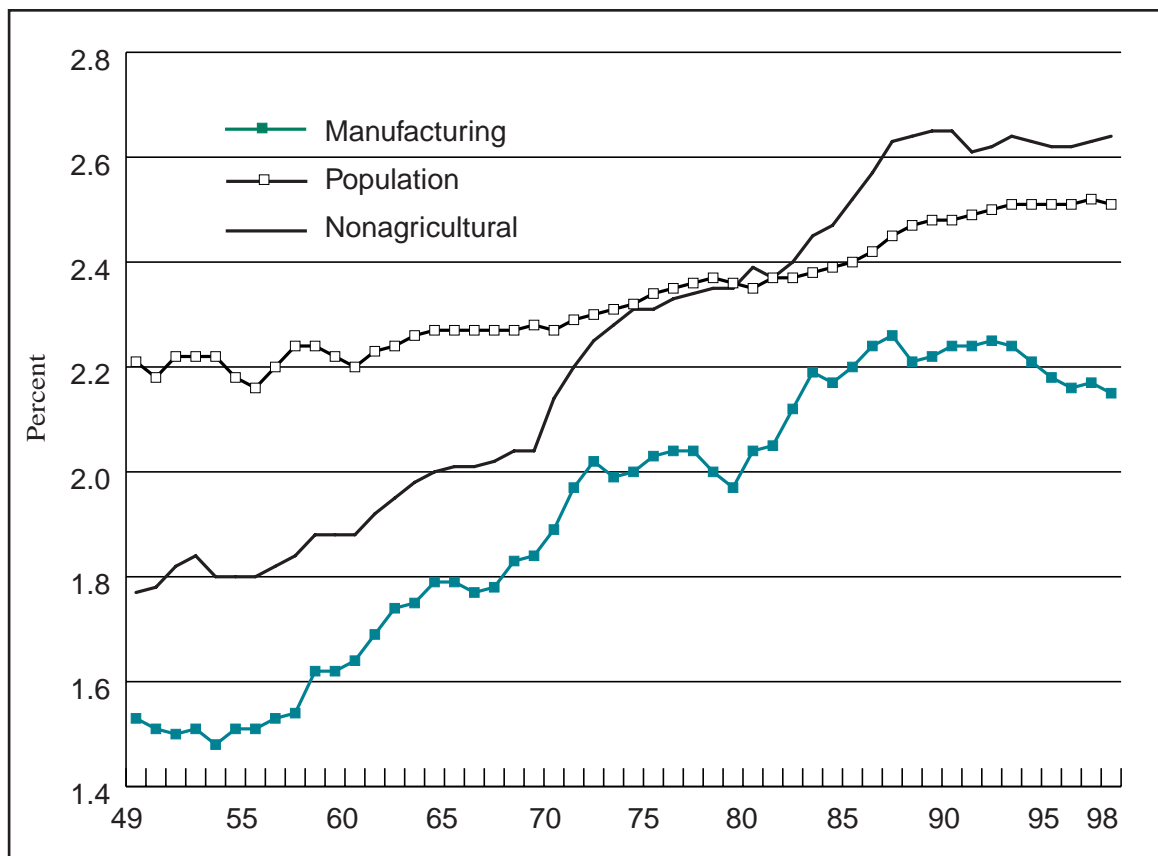
### *Manufacturing's Share of Nonagricultural Employment*



Source: U.S. Department of Labor, Bureau of Labor Statistics.

- Manufacturing's share of nonagricultural employment has been steadily declining for both Virginia and the U.S. during the past 50 years.
- The decline in manufacturing's relative share of nonagricultural employment has been largely due to the faster growth of the nonmanufacturing employment.
- From 1949 to 1998, nonmanufacturing employment increased at an average 3.4 percent annual rate in Virginia compared with only 1.2 percent for manufacturing.
- For the U.S. nonmanufacturing employment during this period grew 2.7 percent annually versus 0.5 percent for manufacturing.

***Virginia's Share of National Manufacturing Employment, Nonagricultural Employment and Population***



Source: U.S. Department of Labor, Bureau of Labor Statistics.

- Before 1979 Virginia's share of the nation's population was greater than its share of nonagricultural employment. Since 1979 Virginia's share of the nation's nonagricultural employment has been greater than its share of population due to rapid nonagricultural employment growth.
- In 1949 Virginia's 2.21 percent share of the nation's population was 44 percent greater than its 1.53 percent share of the nation's manufacturing employment.
- In 1987 Virginia's share of population was only 8 percent greater than its share of manufacturing employment due largely to more rapid manufacturing growth.
- Since 1987 the gap between Virginia's share of population and manufacturing employment has widened to 16 percent.